B1 General Plan 2020 and Envision San Jose 2040

General Plan Policies

San Jose 2020

- The General Plan represents the City's official policy regarding the future character and quality of development, and establishes goals and policies as the framework for decision-making on both private and public projects.
- The General Plan includes policies that are both directly and indirectly related to flooding.
- The City's planning and regulation of urban development directly affect flooding in San Jose.
- City policies and land use decisions directly affect the design of Santa Clara Valley Water District channel modifications.
- The City's General Plan Overall Flooding Goal is to protect the community from the risk of flood damage.

San Jose 2020 flooding policies

- New projects should be designed to minimize potential damage due to storm waters and flooding to the site and other properties.
- In designing improvements to creeks and rivers, adjacent properties should be protected from flooding.
- The "modified floodplain design" is the preferred design for future flood control facilities. The "widen-one-bank" and "trapezoidal channel" designs should only be used when funding or right of way limitations make the use of the modified floodplain design impractical.
- The City should continue to cooperate with other public and private jurisdictions and agencies to coordinate emergency response and relief efforts in case of flooding.
- New development should be designed to provide protection from potential impacts of flooding during the "1%" or "100-year" flood.
- Development in watershed areas should be allowed when adequate mitigation measures are incorporated into the project design to prevent unnecessary or excessive siltation of flood control ponds or reservoirs.
- Designated floodway areas should be preserved for non-urban uses.

- The City and the Santa Clara Valley Water District should cooperate to develop flood control facilities to protect the Alviso and North San Jose areas from the occurrence of the "1%" or "100-year" flood.
- Appropriate emergency plans for the safe evacuation of occupants of areas subject to possible inundation from dam failure and natural flooding should be prepared and periodically updated.
- The City should support State and Federal legislation which provides funding for the construction of flood control improvements in urbanized areas.
- The City should require new urban development to provide adequate flood control retention facilities.
- The City should cooperate with the Santa Clara Valley Water District to develop additional flood control retention facilities in areas where existing retention facilities are nearing capacity.

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CITY OF SAN JOSE
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Floodplain Management

B1 General Plan 2020 and Envision San Jose 2040

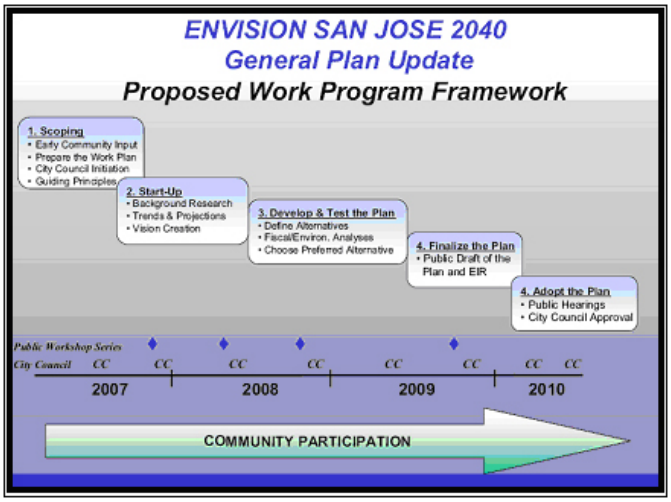
General Plan Update

The current vision for the future growth and development of the City are captured in the San Jose 2020 General Plan, which was adopted by the City Council in 1994.

While the strategies in the Plan serve as a consistent and stable framework, San Jose's dynamic landscape continues to grow and evolve. It is once again time to consider the present and look ahead to the City's future by updating the General Plan. Titled, "Envision San Jose 2040", this will be the updated blueprint for the future growth of San Jose in the year 2040.

On June 26, 2007 the City Council approved the proposed Guiding Principles, Work Program and Community Participation Program for the Envision San Jose 2040 General Plan Update. The outcome of this study session on flooding will directly impact the development of the General Plan update and will provide the framework for San Jose's long-term growth.

ENVISIONSAN JOSE2040



Information regarding the Guiding Principles, Work Program, Community Participation, and Schedule for the Envision San Jose 2040 General Plan Update is available at the San Jose Planning Division's website at:

www.sanjoseca.gov/planning/gp_update/default.asp

B3 The National Flood Insurance Program (NFIP)

What is the National Flood Insurance Program?

The National Flood Insurance Program (NFIP) was created by Congress in 1968 to protect lives and property and to reduce the financial burden of providing disaster assistance. For decades, the national response to flood disasters was generally limited to constructing flood control works such as dams, levees, and the like, and providing disaster relief to flood victims. This approach did not reduce the losses, nor did it discourage unwise development.

The Federal Emergency Management Agency (FEMA) administers the NFIP. Nationwide, over 20,000 communities participate in the NFIP – nearly all of California's flood prone communities participate.

The NFIP is based on a mutual agreement between the Federal Government and communities. Communities that participate agree to regulate floodplain development according to certain criteria and standards. The partnership involves:

- Flood maps. In support of the NFIP, FEMA identifies flood hazard areas throughout the U.S. and its territories by producing flood maps that are used by communities, insurance agents, and others.
- Flood insurance. Property owners in participating communities are eligible to purchase federally-backed flood insurance for buildings and contents. Flood insurance is required for insurable structures within 100-year floodplains to protect Federal financial investments and assistance used for acquisition and/or construction purposes within participating communities.
- Regulations. Communities must adopt and enforce minimum floodplain management regulations so that development, including buildings, is undertaken in ways that reduce exposure to flooding. FEMA uses the 100-year floodplain standard which constitutes a reasonable compromise between the need for building restrictions to minimize potential loss of life and property and the economic benefits to be derived from floodplain development.

Floodwaters surge under the St. John Street bridge in 1995 (HP Pavilion in the background).

Is community participation mandatory?

Community participation in the NFIP is voluntary. Each identified flood prone community must assess its flood hazard and determine whether flood insurance and floodplain management would benefit the community's residents and economy.

If a community chooses NOT to participate in the NFIP, flood insurance and Federal or Federal-related financial assistance is not available under the NFIP for acquisition or construction purposes in a 100-year floodplain.

Also, if a Presidentially-declared disaster occurs as a result of flooding in a non-participating community, no Federal financial assistance can be provided for the permanent repair or reconstruction of insurable buildings in these areas.

How does the NFIP benefit property owners? Taxpayers? Communities?

Through the NFIP, property owners in participating communities are able to insure against flood losses. By employing wise floodplain management, a participating community can protect its citizens against much of the devastating financial loss resulting from flood disasters. Careful local management of development in the floodplains results in construction practices that can reduce flood losses and the high costs associated with flood disasters to all levels of government.

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Floodplain Management

CITY OF SAN JOSE
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B3 The National Flood Insurance Program (NFIP)

Nationwide flood information:

1. $2.4 billion per year – Average flood losses in the United States
2. 1,000 – Flood events that have been designated as federally declared disasters in the last 50-years
3. *75% - Percentage of federally declared disasters over the past 5 years that involved flooding*

City of San José floodplain and flood insurance data as of July 31, 2007:

1. **20,000** – Estimated number of San Jose properties in FEMA 100-year floodplain
2. **8,448** – Total number of NFIP flood insurance policies in force
   - *93% of the policies are for RESIDENTIAL properties*
   - *9% of the policies are for properties outside the 100-year floodplain*
   - *70% of the policies are for structures built before the City joined the NFIP (1982)*
2. **$6,307,726** – Annual San Jose NFIP flood insurance premiums (2007)
3. **$1,719,520,800** – Amount of flood insurance coverage in force
4. **265** – Total number of flood insurance claims
5. **$3,481,979** – Amount of flood insurance claims

B4 San Jose's flood construction standards

The City of San José has been an active participant in the National Flood Insurance Program (NFIP) since 1982. As stated in Fact Sheet B3, participation in the NFIP is voluntary and is based on an agreement between communities and the Federal Government. If a community adopts and enforces a floodplain management ordinance to reduce future flood risks to new and existing developments in floodplains, the Federal Government will make flood insurance available within the community as a financial protection against flood losses. The City of San José adheres to the NFIP regulations by administering land use and construction permits in conformance with Municipal Code Chapter 17.08, Special Flood Hazard Area Regulations (Flood Hazard Regulations).

Revisions to the City's Flood Hazard Regulations were adopted in February 2006 to recognize the recent changes in San Jose's 100-year floodplains due to the substantial flood improvements provided by the Downtown and Lower Guadalupe Flood Protection Projects (administered by the Santa Clara Valley Water District), and to comply with revised NFIP standards.

The City's Flood Hazard Regulations is based on the NFIP's minimum requirements and, in general, require that new construction, substantially improved or substantially damaged existing buildings in 100-year floodplains must have their lowest floor (including basement) elevated to or above the 100-year flood elevation (the NFIP refers to this as the base flood elevation). Non-residential structures in 100-year floodplains can be either elevated or designed and constructed to be watertight (dry-floodproofed).

Elevated residential structures in Alviso, 2007

Typical flood construction standards for all new and substantially improved buildings in 100-year floodplains:

- All new construction and substantial improvements of **residential buildings** must have the lowest floor (including basement) elevated to or above the base flood elevation.
- All new construction and substantial improvements of **non-residential buildings** must either have the lowest floor (including basement) elevated to or above the base flood elevation or dry-floodproofed to the base flood elevation.
- Buildings can be elevated to or above the base flood elevation using fill, or they can be elevated on extended foundation walls or other enclosure walls.
- The extended foundation walls or other enclosure walls must be designed and constructed to withstand forces from flood waters, otherwise the walls can fail and the building can be damaged. Foundation and enclosure walls must be constructed with flood-resistant materials and contain openings that will permit the automatic entry and exit of floodwaters. These openings allow floodwaters to reach equal levels on both sides of the walls and thereby lessen the potential for damage. Any enclosed area below the 100-year flood elevation can only be used for the parking of vehicles, building access, or storage.
- Building support utility systems such as HVAC, electrical, plumbing, air conditioning equipment, including duct-work, and other service facilities must be elevated above the 100-year flood elevation or protected from flood damage.

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B5 Community Rating System (CRS)

The National Flood Insurance Program's Community Rating System (CRS) Program is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. As a result, flood insurance premium rates are discounted to reflect the reduced flood risk resulting from the community's activities. The CRS is similar – but separate from- the private insurance industry's programs that grade communities on the effectiveness of their fire suppression and building code enforcement.

CRS discounts on flood insurance premiums range from 5% up to 45%. The CRS discount for the City of San Jose is 15% for policies where the property is located within the 100-year floodplain (5% for properties outside the 100-year floodplain). This discount is based on the City's CRS "Class 7" status.

The CRS assigns each participating community to a class based on the total points the community earns from the activities they perform. The CRS activities fall into 4 categories of activities as described below. There are activities under PUBLIC INFORMATION and FLOOD DAMAGE REDUCTION that the water district performs and which San Jose gets credit for.

Many other California communities participate in the CRS:

	Class
City of Cupertino	8
City of Santa Clara	8
Santa Clara County	8
City of San José	**7**
City of Morgan Hill	7
City of Palo Alto	7
City of Los Angeles	7
City of Milpitas	6
Sacramento County	5

CRS Classification and Premium Reductions		
Class	Within 100-year floodplain (%)	Outside 100-year floodplain (%)
1	45	10
2	40	10
3	35	10
4	30	10
5	25	10
6	20	10
7	15	5
8	10	5
9	5	5
10	0	0

1. Public Information

- This category includes activities that advise people about the flood hazard, flood insurance, and ways to reduce flood damage.
- San Jose gets credit for the water district's annual floodplain mailer.
- Credit is also given to the City's Flood Information Service which is a free service that benefits not just the property owners but also lenders, insurance agents and real estate agents that need information mostly on flood zones and flood insurance.

2. Mapping and Regulations

- This category consists of programs that provide increased protection to new development.

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B5 Community Rating System (CRS)

3. Flood Damage Reduction

- This category includes activities that reduce the flood risk to existing development (ex. Floodplain Management Planning and Acquisition and Relocation of buildings within the 100-year floodplain).
- San Jose gets credit for the water district's routine channel maintenance work which involves sediment removal, erosion repair, and levee maintenance.

4. Flood Preparedness

- This category has 3 activities: flood warning, levee safety, and dam safety projects.

The City and Santa Clara Valley Water District recertifies annually to FEMA that they are continuing to perform the activities that are being credited by the CRS. Recertification includes progress reports for certain activities. A cycle verification takes place usually every 5 years and is conducted in the form of a verification visit each to the City and the water district.

In 2006, Roseville, CA, became the nation's first community to be awarded the highest possible "Class 1" CRS rating. Property owners in Roseville's 100-year floodplain enjoy a 45% discount (10% for areas outside the 100-year floodplain).

B6 FEMA map modernization and levee recertification

FEMA

Since 1982, the City of San Jose has been an active member of the Federal Emergency Management Agency's (FEMA) National Flood Insurance Program (NFIP). Fact sheet B3 provides additional information about this program. One of the key products that FEMA produces for communities is a map of the location of the regulated 100-year floodplain. Properties within the regulated 100-year floodplain are subject to special building standards and requirements for flood insurance. The maps are officially called Flood Insurance Rate Maps (FIRMs) and commonly called flood maps.

The flood maps were originally produced by FEMA in the 1980s and are intended to show areas that do not have flood protection from the 100-year flood. The original and current maps are paper maps and sometimes are difficult to read and interpret. With the initial production of maps, FEMA grandfathered in some older flood protection structures such as levees without a rigorous examination of the actual capacities of those structures. Periodically FEMA updates the flood maps in Santa Clara County, usually when a new flood protection structure is constructed, removing property from the regulated 100-year floodplain (e.g. Downtown San Jose adjacent to the Guadalupe River Flood Protection Project). Occasionally, FEMA would sponsor a special study to examine a flood protection structure (e.g. Alamitos levee) to determine if it provided 100-year flood protection and if not, FEMA would add the surrounding area into the regulated 100-year floodplain. Nationally many difficulties with FEMA's maps were recognized and as a result, Congress authorized a Map Modernization Program.

In 2005, FEMA launched its Map Modernization Program in Santa Clara County. This effort will digitize the flood map information and be compatible with GIS systems. In 2006, FEMA decided that levees and levee-like structures should be examined to determine if these structures function as intended and this effort is called levee recertification.

Central Valley, California, Levee Failure, 2006.

Anticipated status of levee recertification Effort in San Jose

FEMA identified four levees in San Jose, owned by the water district, for initial evaluation.

1. Guadalupe River (Highway 101 to Highway 237): No changes to the flood maps are expected. Accreditation is anticipated.
2. Thompson Creek (Aborn Road to Quimby Road): No changes to the flood maps are expected. Accreditation is anticipated.
3. Coyote Creek (Trimble Road to the Water Pollution Control Plant): FEMA previously required additional documentation to recertify this levee. In June 2007, the City Council signed a resolution authorizing the execution of an agreement (called Provisionally Accredited Levee or PAL agreement). This agreement provides City staff 24-months to acquire and/or assemble the required documentation to be submitted to FEMA, in coordination with the Santa Clara Valley Water District, that is required to update the certification for this levee. FEMA recently notified the City and the water district that this levee will be accredited. Therefore, no changes to the flood maps are expected.

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B6 FEMA map modernization and levee recertification

4. San Tomas Aquino Creek (San Tomas Aquino Road to Westmont Avenue): This levee was built in the early 1980's prior to current FEMA standards being established. While the levee is maintained properly, it does not have the freeboard (factor of safety usually expressed in feet above a flood level) that is currently required. Extensive changes to the levee would be needed to add the freeboard. Accreditation of the levee, meeting current standards, is not possible at this time. Changes to the flood maps will not be known until FEMA releases the maps for review. Therefore, the number of parcels affected by this change is not known at this time.

Status of levee-like structures in San Jose

FEMA identified 13 levee-like structures in San Jose which are roadways or railway embankments owned by a variety of entities. Information provided to FEMA showed that these structures did not create flood depths needing further regulation or insurance. Preliminary feedback from FEMA indicates that no changes to the flood maps are expected surrounding levee-like structures.

Status of map modernization

It is anticipated that FEMA will issue preliminary digital flood maps in October 2007. These maps will show changes to some areas due to the examination of levees and levee-like structures. A 30-day review of these preliminary maps will allow local evaluation of the map changes prior to public release.

A Look to the Future

Both FEMA and the Army Corp of Engineers are anticipating periodic assessments of flood protection structures, particularly levee systems. In a letter to the Santa Clara Valley Water District, dated September 25, 2007, FEMA makes the following observations:

- Levees are designed to provide a specific level of protection.
  - Overtopping and failure are possible in larger flood events.
- Levee systems require regular maintenance and periodic updates.
- Land use agencies should monitor impacts of development that may lead to increased runoff during storm events.
- Land use agencies should closely monitor land uses to assure new development does not compromise flood protection systems.
- Everyone needs to understand the risk of life and property behind levees.

Based on this feedback, the City will evaluate our process to respond to any future FEMA/Army Corps requirements.

B7 Proposed state legislation related to flooding

There are several pending flood management legislations in both the State of California's Senate and Assembly. Although most of them only affect the Central Valley at this time, some of these bills may impact local jurisdictions, like the City of San José, in the future.

The following are brief summaries of some of the flood management legislations provided by the State's Department of Water Resources (DWR). These bills are mostly aimed to reduce flood risk in the Central Valley where there are estimated 200,000 structures and 500,000 people that are vulnerable to flooding.

1. Assembly Bill No. 162 (Wolk) Land Use: Water Supply

- This bill would require that the land use element of a city or county's general plan identify specific areas subject to flooding. It would require that the conservation element of general plans identify rivers, flood corridors and other land that may accommodate floodwater, and would require cities and counties to establish policies to minimize flood risk for new development. The bill would also require cities and counties, when revising the safety element, to consult with the Reclamation Board.
- Introduced in January 22, 2007, this bill was signed by the Governor on September 27, 2007.

2. Assembly Bill No. 5 (Wolk) Flood Protection: Local Plans

- This bill makes changes to provisions of law being added or amended by three bills that all relate to flood management. The bills that would be amended by the provisions of AB 5 include SB 5 (Machado) relating to flood protection, SB 17 (Florez) relating to the Reclamation Board and AB 156 (Laird) relating to flood control.
- Introduced in December 4, 2006, this bill was last amended in the Assembly on September 7, 2007 and was sent to the Governor's office for approval on October 1, 2007.

3. Senate Bill No. 5 (Machado) Flood Management

- This bill states the intent of the Legislature to develop a comprehensive integrated flood policy that addresses all aspects of flood management, including changes in land use planning and the need for a State Plan of Flood Control (refers to the state and federal flood control works, lands, programs, plans, conditions, and mode of maintenance and operations of the Central Valley's Flood Control Projects).
- Over the next eight years, this bill aims to limit development in areas without 100-year flood protection. After 2015, development would not be allowed in areas without 200-year flood protection.
- This bill is contingent upon enactment of AB 162 and SB 17. DWR further recommends that this bill be contingent upon enactment of AB 5.
- Introduced in December 4, 2006, this bill was sent to the Governor's office for approval on September 12, 2007.

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B7 Proposed state legislation related to flooding

4. Assembly Bill No. 17 (Florez) Flood Protection

- This bill would recast various provisions of law regarding the Reclamation Board and its operations, renaming it the Central Valley Flood Protection Board, increasing the Board's membership and placing new requirements on the Board regarding its prescribed duties.
- Introduced in December 4, 2006, this bill was sent to the Governor's office for approval on September 12, 2007.

5. Assembly Bill No. 156 (Laird) Flood Control

- This bill would make changes to various provisions of law relating to DWR's flood management activities, including mapping of areas at risk of flooding, preparation of a status report on the State Plan of Flood Control, notification of property owners at risk of flooding, environmental enhancement activities, and maintenance area formation.
- Introduced in January 18, 2007, this bill was sent to the Governor's office for approval on September 28, 2007.

6. Assembly Bill No. 70 (Jones) Flood Liability

- This bill would provide that a city or county may contribute a fair and reasonable share of the increased flood damage caused by its unreasonable approval of developments following the failure of a state flood control project (any flood control works within the Sacramento River Flood Control (SRFC) Project and the flood control projects in the Sacramento River and San Joaquin River Watersheds). This bill would apply only to decisions made by local governments after January 1, 2008.
- Introduced in December 4, 2006, this bill was sent to the Governor's office for approval on September 26, 2007.

B8 Levels of risk – frequency of the 100-year flood

Cities and counties throughout California consider different levels of risk or exposure to risk in planning for the location of different types of land uses or approving individual building plans. Land uses are often located away from higher risks and buildings are required to use certain building methods to lower the risk of structural failure from those hazards such as earthquake, flood and fire.

The following are definitions and calculations which better help to define flood risk and the possibility of experiencing a flood in a flood prone area. Structures within a 100-year flood plain without flood protection have a 26% chance of being flooded during the same time period. The policy question to consider is if this exposure to flood risk is acceptable?

By Definition

Probability of a 100-year flood occurring in a given year = 1/100

Therefore

Probability of a 100-year flood Not occurring in a given year = (1 - 1/100)

Probability of a 100-year flood Not occurring in 30 years = (1 - 1/100) ^ 30 = 0.7397 = 74%

Probability of a 100-year flood occurring at least once in the next 30 years = 1 - 0.7397 = 26%

Adapted from "Frequency of a 100-Year-Flood" as contained in the California Water Plan Update 2005 (www.waterplan.water.ca.gov/docs/cwpu2005/vol4/vol4-hydrology-frequencyof100yearflood.pdf)

Flood hazard

Many Californians have a false sense of safety from floods due to incomplete information. Current flood threats are higher than commonly thought; the term "100-year flood," for example, is misleading. It does not denote a flood that will occur only once every 100 years, as is commonly believed. Rather, it is the flood elevation (or flow) that has a one percent chance of being equaled or exceeded each year. "Over the lifetime of a 30-year mortgage, there is a 26-percent chance of being flooded by a 100-year flood" if a structure is located within the 100-year flood plain.

Fire hazard

In recent years building codes have been modified and construction has provided measures which has significantly lowered the risk of fire in a home. According to FEMA's floodsmart webpage (www.floodsmart.gov), the average home has a 9 % chance of being damaged by a fire during the course of a 30-year mortgage.

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